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A Note on the Toxicity of Zinc Chloride

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INTRODUCTION

As a consequence of illness and deaths amongst cattle and sheep in Scotland believed to be caused by "smoke" from standard Service hexachlorethane type smoke generators (of which zinc chloride is an important end-product) it was decided to carry out a series of experiments to obtain further evidence concerning the toxicity of zinc chloride for large and small animals.

The toxicity of zinc salts may be considered under two headings, *viz.*, *acute* (due to local corrosive action on the alimentary tract) and *chronic*. Most of the previous experimental work on the chronic form has been carried out with zinc oxide, which is variously believed to be converted into the chloride, lactate or albuminate in the alimentary tract (Grimett, McIntosh *et al.*, 1937) to pass through the intestine largely unchanged (Heller, 1927) or to be toxic on account of such impurities as lead, cadmium or arsenic.

Mallory & Parker (1925) caused acute glomerulonephritis in rabbits by injecting 0·5 to 1 gramme of powdered metallic zinc under the skin.

Heller & Burke (1927) fed rats with zinc salts in amounts equivalent to 0·25 and 0·5 zinc in the total diet. Toxic effects were not observed over several generations and from analyses it did not appear that the zinc content of the organs had increased.

Drinker, Thompson & Marsh (1927) fed cats and dogs with daily doses of from 0·175 to 1·0 gramme of zinc for periods varying from three to 53 weeks. Each of the three cats on the highest dose (1 gramme per day), which is greatly in excess of any likely to occur under practical conditions, was found on *post-mortem* examination to have a hardened, nodular and fibrous pancreas, with partial obliteration of the islets of Langerhans. All animals on the lower rates of dosage remained healthy and showed no lesions on *post-mortem* examination. Only a small fraction of the zinc was assimilated.

Engel (1931) considered that zinc has a toxicity, if any, similar to that of copper—which in rabbits, according to Hall & McKay (1931) and Mallory & Parker (1931), may cause cirrhosis and pigmentation (mostly due to haemofuscin stored in the Kupffer cells) of the liver. Engel quoted the work of Kunkel (1899), who had reported that 28 mg. of zinc albuminate per kg. body weight proved fatal when given by mouth to a rabbit, and of Macht (1931) who had found that in dogs and cats 0·5 gramme of zinc oxide per kg. body weight, caused repeated vomiting, wasting and shivering and that in rabbits a single dose of 1 gramme of zinc oxide was fatal and one of 20 mg. caused renal damage.

Graham *et al.* (1940), failed to induce symptoms of illness in pregnant mares and suckling foals by feeding single doses of 35 grammes of zinc lactate.

Johansson (1942) and Hoffman (1943) report cases of zinc poisoning occurring in cattle kept in byres in which galvanised iron piping was being welded. Symptoms included fever, dyspnoea, anorexia, suppression of milk yield and subcutaneous emphysema. This type of poisoning is due to the inhalation of zinc oxide vapour which is formed as a white smoke during the welding process. The action is a kind of anaphylactic shock caused by metallic particles damaging the lung tissues. It is equivalent to the disease in humans known as brass founder's ague.

Hegsted *et al.* (1945) stated that soluble zinc compounds might cause chronic gastritis in man and that caustic compounds of zinc might occasion skin irritation. He believed that in dermatitis due to zinc chromate it was the chromate portion of the molecule which was responsible.

Gross & Heller (1946) maintained that for white rats and mature mice the maximum non-toxic level in the feed is 1 per cent.

A natural outbreak of chronic zinc poisoning was reported by Grini (1938) to have occurred in four herds of cattle in Norway, shortly after the inclusion in the daily ration of whey that had been transported in iron drums and was later found to contain zinc. The symptoms, which included diarrhoea, followed later by constipation, with flatulence, and muscular weakness, lasted some three weeks and ended in death or slaughter of the affected animals.

EXPERIMENTAL

Both large farm and small laboratory animals were used.

(a) The Large Animals

These consisted of: One Ayrshire cow, two sheep and two goats which were kept in a paddock measuring 75 yards by 10 yards, and of one calf, which was kept in a pen.

The paddock (75 yards by 10 yards) was fenced round with wire and was provided with two gates. Hay and green food were laid out for the animals on the pasture and the concentrates (cattle cakes) fed from movable troughs: water was ever-present and always available.

All animals were subjected to a clinical examination before being placed in the paddock, and found to be healthy and normal. Daily examinations were carried out thereafter until the end of the experiment.

(i) SPRAYING EXPERIMENTS (3.3.46 to 16.4.46)

The whole paddock, including the hay laid out, the water and the coats of the animals themselves, was sprayed with a solution of zinc chloride three times a week.

A knapsack sprayer was used; this conveniently accounted for one-third of the paddock at a fill. The required amount of zinc chloride was made into a concentrated solution and divided into three equal parts. Each third was added to the sprayer and diluted by adding water to fill the container, which had a capacity of two and a half gallons.

Up to March 26th, 1946, any hay left uneaten between sprayings was removed and burned. After this date any uneaten hay was left in the paddock; new hay was added and the whole lot subjected to zinc chloride spray. The gruel and concentrates fed to the calf were sprayed in a similar manner.

Spraying with zinc chloride solution was discontinued after six weeks. (All foodstuffs were henceforth subjected to the action of "smoke" in the gas chamber before being fed to the animals.)

In the *zinc chloride spraying*, from March 3rd to April 16th, 1946, the amounts and dosage were as follows:—

Date	Weight of zinc chloride	Dosage of zinc chloride
March 7th, 1946	750 grammes	1 gramme per square yard
" 11th, "	750 "	1 " "
" 14th, "	1,875 "	2·5 grammes "
" 19th, "	1,875 "	2·5 " "
" 23rd, "	3,750 "	5·0 " "
" 26th, "	3,660 "	4·9 " "
" 29th, "	3,375 "	4·5 " "
April 2nd, "	3,750 "	5 " "
" 8th, "	3,750 "	5 " "
" 12th, "	3,750 "	5 " "
Total	27,288 "	36·5 " "

It should be noted (1) that all the zinc chloride solution was made from commercial stick or fuzed pure zinc chloride except on March 29th and April 12th when it was made from zinc oxide and commercial hydrochloric acid: and (2) that one gallon of zinc chloride solution containing 375 grammes was used for spraying the concentrated food on and after March 29th.

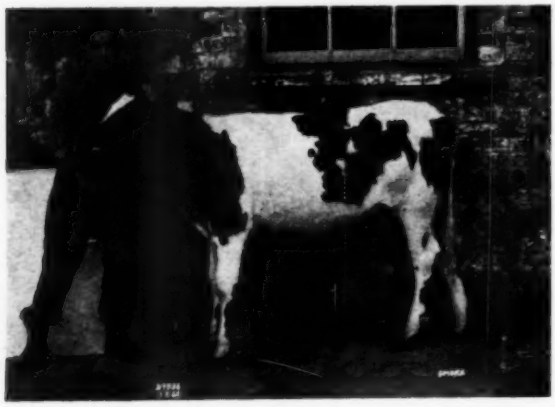
The following amounts of food were used per week: hay, 330 lb.; cake, 182 lb.; roots, 168 lb.; green food, 70 lb. The average proportion of food eaten by the one cow to the four sheep/goats was approximately 10:4.

The approximate weight of zinc chloride ingested between March 7th and April 12th, 1946, was computed to be:—

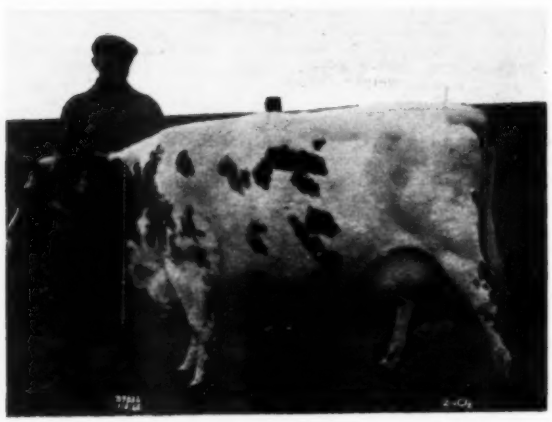
Cow: 19·492 kg. (average daily intake, 527 grammes).
Each sheep and goat: 1·949 kg. (average daily intake, 53 grammes).

Observations.—The Ayrshire cow showed slight loosening of the faeces on the fourth and eighth day after the beginning of the experiment, but returned to normal within 24 hours after its appearance. The milk supply went down by 3 lb. on the 20th day, but was back to normal by the 25th.

The sheep, goats and the calf remained healthy and normal throughout. To begin with the sprayed hay was only nibbled at by all animals. As they became hungry more was eaten, and soon it was being consumed quite avidly.



Calf
Feeding Expt. Zn Cl_2 Spray: six weeks. Smoke contaminated forage: 15 weeks.



Ayrshire Cow
End of Feeding Expt. Zn Cl_2 Spray: six weeks. "Smoke" contaminated forage: 15 weeks.

(ii) Smoking of Foodstuffs (April 17th to July 31st)

Foodstuffs sufficient for one week were placed in the gas chamber (47 cubic metres) and 400 grammes hexachlorethane smoke composition (from the standard Service smoke generator) burned in the chamber. The smoke was allowed to settle for half to three-quarters of an hour and the chamber then opened. The foodstuffs were covered with a greyish-black deposit as a consequence of this treatment. The experimental animals were fed exclusively on this smoke-contaminated forage.

Smoking of foodstuffs took place on the following dates (1946):—

April	May	June	July	May	June	July
17	3	3	4	17	17	19
23	6	4	8	20	21	22
30	8	7	10	22	24	24
	10	9	12	24	26	26
	13	12	15	27	28	29
	15	14	17	31		31

Zinc determinations showed that *hay* had 6,430 parts per million zinc after treatment (normal was 51 parts per million); grass had 940 parts per million zinc after treatment (normal was 35 parts per million); cattle cake had 162 parts per million zinc after treatment (normal was 25 parts per million).

Observations.—Smoke-contaminated foodstuffs were eaten with apparent relish.

The animals were in excellent condition throughout and no adverse clinical signs were shown. This is the more surprising when one considers that they had been confined in a tiny paddock for five whole months and that some slight falling away in condition might have been expected on this account alone.

Autopsy.—The cow, two sheep and two goats were slaughtered on August 7th, 1946. In all cases there were no lesions of pathological significance, the carcases were in excellent condition and were passed as normal and fit for human consumption. The calf was saved and to-day (January, 1948) is a normal healthy beast.

Conclusions

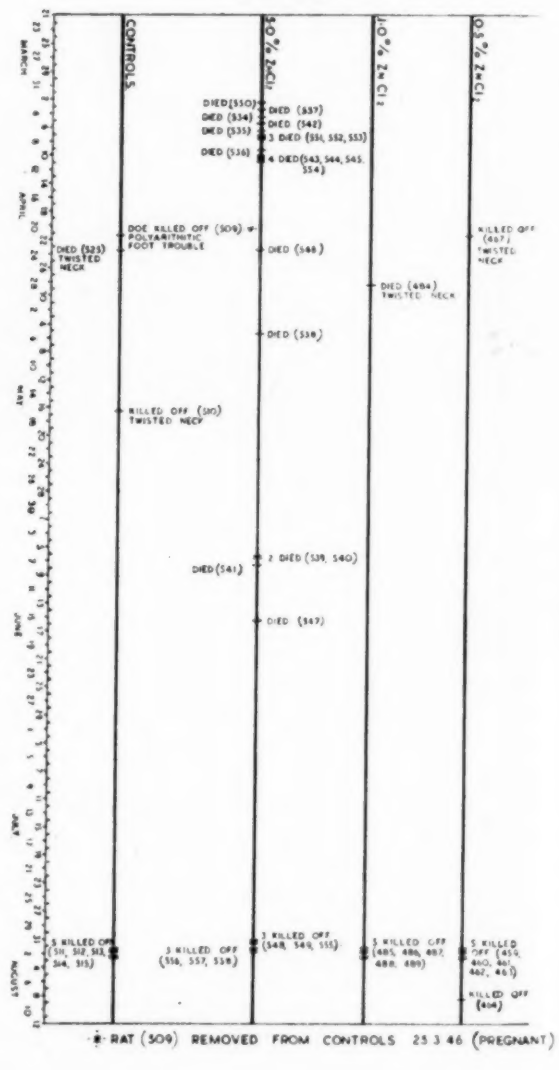
The prime object of the experiment was to induce, if possible, the chronic type of zinc poisoning. Large amounts of zinc chloride were used over a long period without any effect.

Smoke was then employed with equally negative results. Over 50 per cent. zinc chloride is produced on the burning of smoke generators (another product is zinc chromate) and it was considered that the exclusive feeding of foodstuffs contaminated by smoke over a period of months might induce a condition of chronic zinc poisoning. This did not prove to be the case.

(b) Small Laboratory Animals

One hundred Wistar Albino rats were used. These were housed in wire cages and divided into four batches of 25. Each batch of 25 rats was divided into three cages, each containing eight, eight and nine rats respectively.

Graph Showing the Date of the Deaths of the Rats in Each Group



At first solutions of pure zinc chloride of 0·5 per cent., 1 per cent and 5 per cent. strength were made up. Water bottles were filled with these solutions:—

25 Group A rats had 0·5 per cent. solution in water bottles.
25 „ B „ „ 1 „ „ „ „ „ „
25 „ C „ „ 5 „ „ „ „ „ „
25 „ D „ „ water and were used as Controls.

After a fair trial it was found that the rats would not drink the solutions. This idea was therefore abandoned.

The food was now dampened with solutions of zinc chloride. The rats did not mind this at all and ate the contaminated food. This procedure was adhered to consistently for the rest of the experiment. Water was used in dampening the food of the Control "batch" D.

The amount of food eaten and the amount of solutions used daily were carefully determined.

All rats were weighed every second day.

The following table demonstrates the amount of zinc chloride taken per rat per day:—

Group	No. of rats	Amount of food per group (grammes)	Amount of zinc chloride solution per group	Amount of food eaten (grammes) per group	Approximate amount zinc chloride taken per rat per day (mg.)
A	25	300	300 ml. of 0·5% solution	300	60
B	25	300	300 ml. of 1% solution	300	120
C	25	300	300 ml. of 5% solution	300	600
D	25	300	300 ml. water	300	—

The amount of zinc chloride used for dampening the food as deaths occurred had to be assessed proportionately, *e.g.*, when there were 15 survivors in Group C 180 grammes of food was dampened with 180 ml. of a 5 per cent. solution of zinc chloride. All of this was eaten which is equivalent to 600 mg. (approximately) of zinc chloride per rat per day.

Those which died were subject to careful *post-mortem* examinations and specimens were taken for chemical and histopathological examinations.

The experiment continued for six months. (Groups A, B and D were, however, kept for a further period of nine months and the feeding with foodstuffs treated with zinc chloride continued.)

Observations.—Group A (0·5 per cent. zinc chloride), Group B (1 per cent. zinc chloride) and Group D (Controls) were unaffected. Weights in these three groups were maintained during this period. There were no deaths. Two rats were destroyed suffering from twisted neck (torticollis) but nothing abnormal was detected on *post-mortem* examination in either case.

The rats were healthy throughout the experiment, fed consistently well and remained active and in good condition to the end.

In Group C (5 per cent. solution) there was a sudden reduction in weight during the first two weeks from an average of 210 grammes to one of 150 grammes per rat.

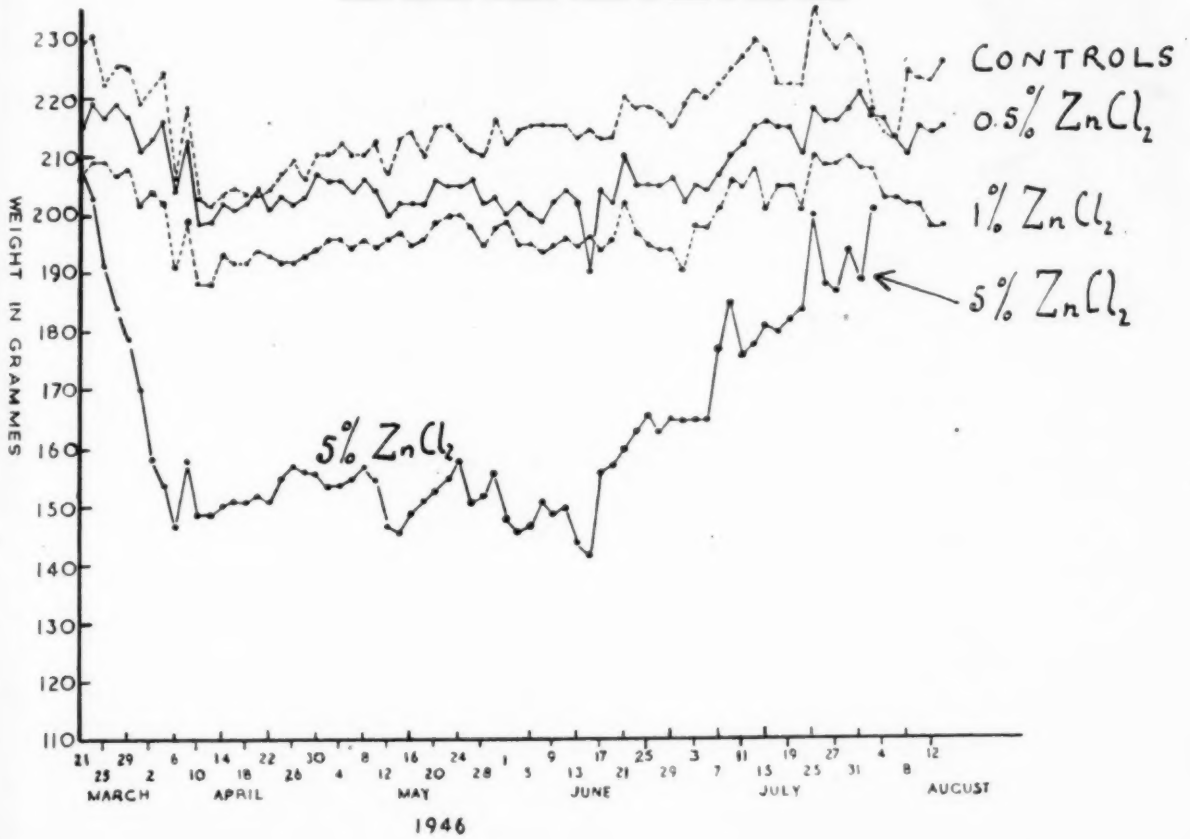
Deaths took place a fortnight after the commencement of the experiment. Thirteen rats died during the next ten days. A tolerance then seems to have been acquired and subsequent deaths occurred at approximately fortnightly to three-weekly or longer intervals. Six were still remaining when the experiment concluded. These six, along with equal numbers of the other groups, were destroyed at the end of six months and examined *post mortem*.

As a matter of interest the remaining animals of Groups A, B and D were kept for a further period of nine months (making a total of 15 months from the commencement of the experiment) and the observations continued. No clinical signs of illness whatsoever were shown.

The symptoms and clinical signs in Group C (see first of the rat Figs., overleaf) included general malaise, staring coat, huddled posture, and loss in weight, but feeding was unaffected throughout.

The *post-mortem* appearances were quite striking. On opening the abdominal cavity the black, slimy character of the intestines was very prominent. This appearance slowly changed, however, and in rats which died later on in the experiment the intestines showed only a grey, slimy appearance.

Graph Showing Average Weight of Rats in Each Group



Rat 535 (5 per cent. Zn Cl_2) 24 hours before death. Staring Coat: Huddled Posture.

Normal Rat

Summary of Typical *Post-mortem* Findings

Anatomical:

Black discoloration of small intestines; haemorrhagic gastritis; generalised enteritis; slight degree of pulmonary congestion. Spleen, liver, kidney and heart showed no lesions.

Histological:

Intestines: Multiple mucosal erosions with blood clots over them.

Kidney: Congestion. Much tubular degeneration of Henle's loops and collecting tubules, with much iron pigment in some tubules Glomerular tufts swollen but not uniformly so.

Lungs: Congestion, haemorrhage and oedema with numerous foamy macrophages and some metaplasia of alveolar lining cells.

Spleen: Congestion. Large macrophages stuffed with pigment. Disappearance of lymphocytes. No necrosis apparent.

Heart: Showed small areas of oedema.

Liver and Adrenals: Showed congestion.

The Prussian Blue reaction for sections of the kidney, lung and spleen, confirmed the presence of iron.

Conclusion

Rats fed on food contaminated with various concentrations of zinc chloride could tolerate the daily intake of 12 ml. 0·5 per cent. zinc chloride (equivalent to 60 mg. zinc chloride per day) and 12 ml. of 1 per cent. zinc chloride (equivalent to 120 mg. zinc chloride per day) over a period of 15 months. Those rats taking in 12 ml. of 5 per cent. zinc chloride solution (equivalent to 600 mg. zinc chloride per day) succumbed comparatively quickly however. *Post-mortem* appearances were characteristic. Damage to the kidney, suggesting a cumulative action of zinc, was the most significant point. The corrosive action of zinc on the alimentary tract was shown.

Rat 535 (5 per cent. Zn Cl_2).
Black slimy character of Intestines.

Summary

An unsuccessful attempt was made to induce a chronic type of zinc poisoning in two sheep, two goats, a calf, and a cow, by feeding them exclusively for a period of over five months on forage contaminated with zinc chloride solutions and "smoke." The "smoke" was produced by burning hexachlorethane smoke composition as used in standard Service smoke generators which produces over 50 per cent. zinc chloride as an end product.

No adverse clinical signs nor symptoms were manifested and no pathological lesions were shown on *post-mortem* examination. The carcases were normal and passed fit for human consumption. The calf is to-day (January, 1948) a normal healthy beast.

Rats could tolerate the daily intake of up to 120 mg. zinc chloride in their food over a period of 15 months. Those taking in 600 mg. zinc chloride daily, however, succumbed quickly showing characteristic symptoms and *post-mortem* lesions. The main effect seen was the corrosive action on the intestines and a characteristic damage to the kidneys due perhaps to the cumulative action of zinc.

Acknowledgments.—The writer wishes to thank the Chief Scientist, Ministry of Supply, for permission to publish this paper.

Thanks are also due to Captain K. R. Gabb, R.A.V.C., and members of the Veterinary and Technical Chemistry Sections, Experimental Station, Porton, for technical assistance.

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CLINICAL COMMUNICATION

Salmonella dublin Infection in Adult Cattle

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Enteritis due to Salmonella infection has occurred as a sporadic disease on five farms in the Glastonbury area of Somerset during the summer and autumn of 1947. Seven cows were affected and two died. Diagnosis was based on the isolation of *Salmonella dublin* from the faeces and milk of affected animals.

Epidemiology

All attempts to find the source of infection have so far failed. Four of the five herds were self contained for at least 18 months and the fact that the disease has occurred at a time of year when the cattle in this district are not housed and are milked in the field has made the task of even suspecting the origin of the infection very difficult. Avenues which have been followed, such as water, cattle-cake and human carriers, were not successful. In two of the herds the initial cases were diagnosed in mid-September and there was no history to suggest previous cases; the results of tests on faeces and/or blood from the remainder of the herd were negative, and this would tend to confirm the lack of previous cases. In two of the other herds cases of enteritis had occurred in June and July of last year and samples taken during August from those animals which recovered showed the presence of *S. dublin*, indicating very strongly that these cases, too, were due to the organism. In the fifth herd the affected animal was from a batch recently bought in.

Symptoms and Course

These were largely similar to the description given by John [1] and by Bythell [2]. Like John we have noted that cases showing dysentery usually recovered while those in which the faeces contained no blood terminated fatally. We have, however, generally noted higher temperatures than those previously recorded—two of the cows showing temperatures of 107° F. Abortions occurred two weeks after recovery in two animals whilst one animal which died aborted at the height of the disease. In fatal cases death occurred approximately five days after the onset of symptoms, otherwise complete recovery took between 10 and 20 days.

Treatment

There was no marked response to any specific drug and treatment was directed towards conserving body heat and combating the extreme dehydration and depression which developed very rapidly.

Diagnosis

Diagnosis was established by the finding of *S. dublin* in the faeces. Cultures were made direct on to MacConkey and desoxycholate citrate agar plates and also into nutrient broth. After 24 or 48 hours' incubation non-lactose fermenting colonies were picked from the plates into peptone water and on to agar and MacConkey slopes and further tests carried out. If the plates showed no suspicious colonies sub-cultures were made from the broth after 24 hours' incubation on to MacConkey and desoxycholate agar plates. Any suspicious colonies were then picked into peptone water and on to agar and MacConkey. The growth in peptone water, obtained from a single colony, was subjected to biochemical tests and those cultures giving reactions typical of the *S. enteritidis* group were sent for serological identification.

Blood samples were also taken and agglutination tests made against *S. dublin* and *S. pullorum* suspensions. In samples taken during the stage when symptoms were shown the results of such tests were inconclusive and agglutinins did not appear in the blood in any quantity until some time after the acute stage had passed —this making the serological test of little value in diagnosis.

S. dublin was recovered from samples of milk taken with aseptic precautions from two of the affected cases within three days of the onset of symptoms; when the disease had subsided, however, tests on the milk were negative.

Control Methods

Blood samples were taken from all the cows in three herds and subjected to the agglutination test using an "H" suspension prepared from *S. dublin* and an "O" suspension from *S. pullorum*. The "H" antigen was a formalinised suspension of *S. dublin* graduated to an opacity equal to Brown's value No. 4. The latter was used as it contained the same somatic antigen as *S. dublin* (IX, XII).

The results of the three herd tests are set out in Table I.

Table I

		Titre						
	Antigen	0	1:10	1:20	1:40	1:80	1:160	1:1,280
Herd G ..	H	3	5	5	2	1		1†
	O	16					1†	
Herd F ..	H	13	16	12	8	5*		2†
	O	17	16	16	6		2†	
Herd C ..	H		1	4	3	2		
	O	7	3					

* Resampled after eleven days but no significant alteration in titre. Faeces samples also taken but culture results were negative.
† Cows excreting *S. dublin* which had shown symptoms of acute enteritis some time during preceding three months.

In view of the fact that there is little knowledge of changes of blood titre in affected animals, we were not satisfied that blood tests alone were sufficient to identify carrier animals. For this reason samples of faeces were taken as an alternative method in one herd and as an additional measure some weeks after the blood had been tested in another. In neither case could *S. dublin* be isolated from the faeces of normal members of the herd.

Blood titres of affected animals were taken at fairly frequent intervals and a comparison of the results with the course of the disease is set out in table II.

Table II

Cow G1 ..	Date ..	19/6	15/8	29/8	1/12	
	Course..	Onset	Normal	Normal	Normal	
	Faeces..	NT	+	+	+	
	Titre ..	NT	1:5,120	1:5,120	1:640	
Cow G2 ..	Date ..	9/8	15/8	21/8	29/8	1/12
	Course..	Onset	Recovering	Recovered	Normal	Normal
	Faeces..	+	+	+	+	+
	Titre ..	NT	0	1:640	1:320	1:1,280
Cow T1 ..	Date ..	17/9	24/9	14/11	1/12	
	Course..	Onset	Recovered	Normal	Normal	
	Faeces..	+	+	+	+	
	Titre ..	NT	1:40	1:2,560	1:1,280	
Cow T2 ..	Date ..	9/10	14/10	14/11	1/12	
	Course..	Onset	Recovering	Recovered	Normal	
	Faeces..	+	+	+	+	
	Titre ..	NT	1:40	1:1,280	1:5,120	

NT = Sample not taken.

Remarks

It would appear that *S. dublin* is excreted in the milk of cows during the acute stages of the disease. This would be explained if the acute symptoms are accompanied by a bacteraemia as frequently happens in certain other Salmonella infections. In view of the large number of organisms which are passed in the faeces of recovered cows, however, it would seem probable that faecal contamination is a more common origin of the organism in bulk samples.

In some instances, at least, agglutination tests carried out on the blood serum are of no value in diagnosing the disease in its acute form, although such tests appear to be very useful in confirming the diagnosis at a later date and also in identifying those carrier animals which have suffered from the disease.

Acknowledgments.—Close collaboration has been maintained throughout with the Public Health authorities and our thanks are due to Dr. Joan Taylor of the Salmonella Reference Labora-

(*Concluded at foot of col. 1, p. 86*)

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ABSTRACTS

[Intracutaneous Brucellosis Tests in Cattle. Live, I., & Stubbs, F. L. (1947.) *Amer. J. vet. Res.* **8**. 380.]

A non-agglutinogenic skin-test material was prepared from *Br. abortus* by slightly modifying a method described by Krasov (1941) (*Veterinaria*, Moscow, **1**, 56). Briefly, the bacterial bodies were washed with ethyl alcohol several times, then autoclaved at 120° in the presence of 0·2N sulphuric acid, after which the fluid was adjusted to *p*H 7·0, whereupon a dense precipitate formed. This was removed by centrifuging, leaving a clear supernatant which was the skin test-material. Since it was obtained by hydrolysing brucella cells the substance is referred to as brucella hydrolysate or BH.

The antigenicity of BH was studied both in rabbits and cattle but neither single nor repeated intracutaneous injections provoked agglutinin production nor was there any evidence that the intracutaneous injection of the material sensitised these animals to subsequent skin tests.

BH was applied in the manner of tuberculin in the caudal fold of cattle in herds under the test and slaughter method for eradication of brucellosis. All the cattle negative to the agglutination test (147) were devoid of allergic skin sensitivity, while of 14 animals having positive or suspicious agglutinin titres, nine were negative to the skin test.

In herds affected with chronic brucellosis, there was marked disagreement between the skin tests and the agglutinin titres.

Some animals vaccinated with strain 19 retained an allergic skin sensitivity after their blood serum titres had returned to a negative status.

The significance of these findings is discussed, the obvious conclusion being that the possession of a skin sensitivity is not dependent on having circulating agglutinins. The authors consider that whilst BH cannot be relied upon to diagnose individual cases of brucellosis it might be of value in surveys to detect the animals that have been in contact with infected sources.

J. S. P.

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[The Blood-sugar Index in Dogs after Racing. (Trans. title.) Bodingbauer, J. (1940.) *Wein. Tierärtz. Monats.* **27**. 129.]

The influence of physical exercise on the blood-sugar of dogs was studied, the estimations being made by the Hagedorn-Jensen method. The following effects were observed: trained animals and those bred for racing showed little reaction, although bitches showed more than dogs. Untrained dogs and those unsuited to a long race showed a hypoglycaemia. It was concluded that fitness for racing or similar physical activity was related to the ability to form blood-sugar.

F. A.

Weekly Wisdom

So that if there existed anyone whom we assuredly knew to be capable of making discoveries of the highest kind and of the greatest possible utility to the public: and if all other men were therefore eager by all means to assist him in successfully prosecuting his designs, I do not see that they could do aught else for him beyond contributing to defray the expenses of the experiments that might be necessary: and for the rest, prevent his being deprived of his leisure by the unseasonable interruptions of anyone.—Descartes: "A Discourse on Method."

* * * * *

The National Institute of Poultry Husbandry, Newport, Shropshire has issued a classified list of its publications (1926-46) of research in poultry and rabbit husbandry.

tory for typing the organisms recovered, and to Dr. I. A. Boycott of the Public Health Laboratory, Taunton, and Dr. K. E. Cooper of the Department of Preventive Medicine, Bristol University, for helpful advice. Our thanks are also due to the junior staff of the Veterinary Investigation Department, Bristol, for assisting in the routine laboratory work.

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REVIEW

[Index of Diagnosis. By Hamilton Kirk, M.R.C.V.S. Third Edition, published by Baillière, Tindall & Cox, 7 and 8, Henrietta Street, London, W.C.2. Price 40s. net.]

The book speaks for itself, and the fact that a third edition has been asked for so soon proves its usefulness and efficiency. It has been referred to as an encyclopaedia of symptoms and as such should be of value in the hands of student and practitioner alike. It is well written and easy to read, and is supplied with ample illustrations, many of which are radiographs of great interest. Many new articles have been dealt with and other findings brought up to date. The section on poisoning has been much extended and includes a number of new drugs. To those interested in small-animal practice the work is recommended as a store of information and reference.

IN PARLIAMENT

The Animals Bill

Part II*: Licensing of Stallions

The Minister of Agriculture (Mr. Thomas Williams), moving the Second Reading of the Animals Bill in the House of Commons on February 2nd, said, in the course of his speech: Part II of the Bill provides for an extension of the provision of the Horse Breeding Act, 1918, following recommendations made by the Ministry's Livestock Improvement Committee which is a non-statutory advisory body including both genetical scientists and practical breeders. Under the Horse Breeding Act, 1918, a licence was required for stallions which were travelled or exhibited for service away from home, and licences are only granted for stallions which attain a certain satisfactory standard of health, prolificacy, conformation and physique. The Act was designed to restrict breeding from unfit or unsuitable stallions and generally to improve the quality of British horses, and I think it will be generally agreed that it has achieved considerable success.

There is, however, a serious gap. There is no control over horses standing at home for stud purposes for service either of the owner's mares or for visiting mares, and no matter how unhealthy, unsuitable or how low the standard may be, they can still be used without a licence. The Government have decided, therefore, to accept the recommendations of the Livestock Improvement Committee and to extend the licensing system to all stallions, subject to certain exceptions, which brings it into line with the system already in force for bulls and boars. Under Clause 2 (1) it will in future be necessary to have a licence or permit for the keeping of any stallion over the prescribed age—two years at present—even if it remains on the owner's premises. Certain exceptions are provided in Subsection (2) for stallions which have attained the prescribed age before the Bill comes into force, and for thoroughbreds and prescribed breeds of ponies.

The first exception is designed to avoid too sudden a break. It may be perhaps that we are unnecessarily generous. With regard to thoroughbreds standing at home, I think the stringent conditions governing entry into the General Stud Book are ample for this particular purpose; hence their exclusion from the Bill. It is proposed that the exempted breeds shall include hill, forest and moorland breeds of ponies which live in a semi-wild state, where breeding could not by any manner of means be controlled. In considering applications for licences we shall, of course, apply exactly the same standards that are applied to travelling stallions.

The Bill will cover, therefore, broadly all stallions over the prescribed age, with the exceptions mentioned, including some which do not reach the required standard but which there may be a good reason for keeping entire, for some specialised breeding purpose; we may have some exotic type in a zoological garden which might properly be allowed to mate with its own kind but as to which there is no possible question of it being used for general breeding purposes. It may be that there are other stallions unsuitable for breeding but which their owners, perhaps for sentimental reasons, may wish to keep entire. Then, for instance, there is the type of horse associated with the circus. There is also the type of stallion used for funerals.

* Owing to the length of the debate on the Animals Bill, it was necessary to publish separately extracts of the discussion on the two parts. Part I, relating to financial provision for the eradication of bovine tuberculosis, was reported in our last issue.

To cover such cases, Clause 4 provides for permits, as distinct from licences under Clause 2. The 1918 Act was very simple and easy to administer in order to license stallions which were travelled or exhibited for service. The task of policing premises where stallions are used, however, will be much more difficult. Hence the power which we seek in Clause 6 for the castration or slaughter of those for which a licence or permit is refused. I should point out to those who feel that there may be hardship here that the power under Clause 6 is to order slaughter or castration, the owner being able to decide which shall happen. I think it will be generally appreciated that when a stallion on a farm is not required for breeding purposes, almost invariably it is castrated at an early age. If it is desired to postpone the castration to avoid interference with the work on any farm for a short period, this can be done by the granting of a permit under Clause 4. In any case, there is no desire to use Clause 5 or Clause 6 in a vexatious manner; but we must have the power as an ultimate sanction in what may be bad cases.

Licences granted under existing legislation are for one travelling season only—that is, each year. It does not seem to me reasonable that owners of stallions, whether they travel or not, should have to pay for a licence each year. Therefore, the Bill provides that licences should be granted without limit of time, but subject to revocation at any time. It is intended that the annual inspection should continue, and this arrangement, coupled with the number of stallions concerned, will entail greater expenditure from public funds; but we are satisfied that the upper limit of £20,000 allowed for in the Act of 1918 will be more than sufficient to meet the purpose. The lack of control over the quality and fitness of non-travelling stallions has hindered the improvement of our horses. We feel that that gap ought to be bridged. At the same time, the number of stallions in use for service seems to have fallen to a record low level. I understand that there are only about 1,500 of them, and of those one-fifth are in Scotland.

This legislation has the support of all the National Farmers' Unions and Breed Societies in England, Scotland and Wales. Experience of the benefits of similar legislation as applied to bulls and boars should make acceptable the general principles of this Bill.

Major Sir Thomas Dugdale: I have studied the 1918 Act, and the diseases which became set out are not actually specified; but I understand that, under common form in that Act, they are recognised as diseases constituting grounds for the refusal of a licence. Is the Minister satisfied that the diseases are all hereditary? Scientific evidence on this point is extremely slender, and is certainly contradictory. There is much feeling in regard to who should be the judge of conformation. It is perfectly right, as far as disease is concerned, that the veterinary surgeon should be the authority. I hope that when the Minister sets up his panel, conformation will not be left entirely to the veterinary surgeons, but will be dealt with by experts on breeding, and preferably by nominees of the breeding societies.

Mr. Hurd: Horse breeding is on the decline through being unable to put out enough high quality stallions under the terms of the Ministry's grants.

Lieut.-Colonel Geoffrey Clifton-Brown: This Bill is not only another control on the wretched private owner but, as the Minister has told us, it represents an increased cost to the taxpayer. Not only is the Bill clumsy, but it is extremely untidy and absurd in places.

In the first place, I want to look at the position of our horse population. At the present moment, according to last June's returns, there are 597,000 horses; in 1918 on agricultural holdings alone we had 1,585,000. That is a very nasty outlook. If we are going to make it more difficult now for the owners of stallions we shall reduce the horse population rather than increase it. That confirms my view that by this Bill we are inclined to waste money. The Minister said it is going to cost us more than it has done since 1918. How can it when we had one and a half million horses then and have only half a million now? Surely there should be less work even if there are extra rules.

Mr. Gerald Williams: It seems quite illogical to license the young stallions which will reach the age of two in the future and not all that already exist in the country. No reason has been convincingly given for doing that. The old stallions may go on for ten, twelve, it may be 15 years, producing progeny when they themselves are quite unsound.

The next weakness is that thoroughbreds are exempt. The temptation to keep an unsound thoroughbred is far greater than the temptation to keep a minor class of stallion because the fees which a thoroughbred can command are much higher. One might find a case of a little man in a country village who keeps a half-bred stallion, and who is subject to the requirement of having to license his stallion, whereas his competitor across the road who has a thoroughbred, which may be a roarer, blind in one eye, have spavin and ringbone, does not require to have any licence. Why is that? A thoroughbred which is unsound can cause as much trouble, can do as much harm as any horse or pony in the country.

There is another anomaly about exempting thoroughbreds. Arab horses are entered partly in the Arab stud book and partly in the appendix to the general stud book. That means that the Arabs in the general stud book are to be exempt and the Arabs in their own stud book will require to have a licence. If that is so it seems that something should be done to put the Bill straight. The third weakness is that prescribed breeds are exempt. The reason for that is that it is difficult to catch ponies that are running on the moor and give them a licence, but I wonder if it is impossible? The rams on the Welsh hills are all rounded up each year and are under control, and members of a Welsh breed society think it would be possible to control the stallions there. There are many scrub stallions quite unsuitable for breeding running over the hills. It would be much better to take them away and vastly improve the breed.

Another weakness in the Bill is that licences are to become permanent. At present they are issued annually. A horse very seldom develops a scheduled disease when it is two years old. It is when it becomes an old horse that it goes wrong in its heart, its wind, or eye, or whatever it may be. Once the permit has been given, the Minister has told us that the animal is open to an annual inspection. That is not in the Bill. It merely states that a great deal of money is going to be saved because licences are made permanent, instead of annual. The Minister gave us his assurance that an annual inspection will be made, but that is not enough. Why not put it in the Bill? We should then be satisfied that the licensing system was thorough and the Bill worth while.

The last weakness concerns the list of diseases. The Minister said there was no need to change the list. I am not going to suggest any other diseases which should be included, but I would like to draw the attention of the Minister to the paragraph of these regulations which says that any horse that "goes in the wind" after it is nine years old is all right, and can have a licence. Because a horse "goes in the wind" when it is nine years old a licence can be granted, but if it "goes in the wind" when it is eight years old a licence cannot be granted. I do not know why. It does not make sense.

A great deal depends on the veterinary surgeons who are going to give these licences. I hope the Minister will choose the right men and pay them well in order to encourage the best types to come forward to get on the Minister's rota. I welcome the Bill, if my suggested improvements are included. It is essential that thoroughbreds should be included. It should also be stated in the Bill that there is to be an annual inspection. I hope the Minister will reconsider including all existing stallions, or else give a valid reason for not doing so and that he will consider what I have said about the mountain and moorland breeds.

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Questions

Veterinary Education

In the House of Lords on February 10th, Lord Harlech rose, in the words of his question on the Order Paper: "To ask His Majesty's Government, when the promised Bill to legalise the right to practise by graduates of universities within Great Britain obtaining a degree in a faculty of Veterinary Science will be introduced; whether this right to practise by graduates of universities named in the Second Loveday Report; and what steps the Government now propose to take to ensure for this country and the Colonial dependencies an increased supply of qualified veterinarians for teaching, research, Government administration and private practice."

The Joint Parliamentary Secretary, Ministry of Agriculture and Fisheries (The Earl of Huntingdon): On April 1st, 1946, in another place, my right honourable friend the Minister of Agriculture announced the intention of the Government to introduce as soon as possible legislation dealing with veterinary education and allied matters. The Bill will be introduced as soon as circumstances permit. Its main purpose will be to provide much greater facilities for the training of highly qualified veterinary surgeons, who would practice in this country and in the British Commonwealth. Legislation will not restrict training to any specified universities.

Lord Harlech: While thanking the noble Earl for that reply, I should like to ask whether he can give any clear indication as to when we shall be able to see at any rate the first part of this legislation, which was promised more than a year ago. In view of the fact that the shortage of veterinarians is getting more and more serious overseas, as well as in this country, can the noble Earl do something to expedite the empowering of further universities, other than those already having veterinary faculties, to start them?

(*Continued on page 90*)

NATIONAL VETERINARY MEDICAL ASSOCIATION

Annual Congress at Southport, 1948

The following is the provisional programme of the Association's Congress to be held in Southport from September 8th to 15th.

WEDNESDAY, SEPTEMBER 8TH

Evening reception by the Lancashire Division, with probably a film show.

THURSDAY, SEPTEMBER 9TH

10 a.m.	Opening of Congress by the Mayor of Southport.
10.30 a.m.	Opening of Exhibition of Surgical Instruments, Drugs, etc., by the President, N.V.M.A.
11 a.m.	Paper: "The Tuberculin Test." By Professor T. Dalling, M.A., M.R.C.V.S. Openers of discussion: Mr. G. H. Arthur, M.V.Sc., M.R.C.V.S., and Mr. J. McWilliam, M.R.C.V.S.
Afternoon	Public address. Sir John Boyd Orr, D.S.O., M.C., LL.D., F.R.S., "World Food and Agriculture."
8 p.m.	Civic Reception at the Floral Hall.

FRIDAY, SEPTEMBER 10TH

	All-day visit to the Liverpool Veterinary Hospital, and "Leahurst," for demonstrations.
8 p.m.	President's Reception.

SATURDAY, SEPTEMBER 11TH

Morning	Annual General Meeting.
Evening	May arrange block booking at theatre.

SUNDAY, SEPTEMBER 12TH

Excursions if desired to Blackpool and Lake District.

MONDAY, SEPTEMBER 13TH

10 a.m.	Paper: "Equine Accidents in the Fields of Sport." By Major H. Sumner, M.R.C.V.S., D.V.H. Openers of discussion: Mr. E. Brayley Reynolds, O.B.E., M.R.C.V.S., and Mr. J. S. Cosgrove, M.R.C.V.S.
Afternoon	Paper: "The Present Situation with regard to Food Inspection in England and Wales." By Mr. H. Thornton, B.V.Sc., M.R.C.V.S., D.V.H.
Evening	Annual Banquet—if this can be arranged.

TUESDAY, SEPTEMBER 14TH

10 a.m.	Paper: "Avian Salmonellosis." By Mr. J. E. Wilson, B.Sc., M.R.C.V.S., F.R.S.E. Opener of discussion: Dr. R. F. Gordon, B.Sc., M.R.C.V.S.
11.30 a.m.	Paper: "Canine Leptospirosis." By Miss J. O. Joshua, M.R.C.V.S. Openers of discussion: Dr. R. D. Stuart, M.D., D.Sc., D.P.H., and Miss Susan Mills, M.R.C.V.S.
Afternoon	Divisional (Sectional) Meetings.
Evening	Ladies' V.V.B.F. Dance.

WEDNESDAY, SEPTEMBER 15TH

10 a.m.	Closing Meeting.
11.30 a.m.	Council Meeting.

N.V.M.A. CONGRESS, 1948

September 8th - 15th (inclusive)

List of Hotels in Southport *

	Charge per Day	
	Full Board	*Bed and Breakfast*
LICENSED HOTELS		
Prince of Wales Hotel, Lord Street, Southport (*Headquarters*) ...	30/-	—
Palace Hotel, Westcliffe Road, Birkdale	25/- to 35/-	—
Bold Hotel, Lord Street, Southport	25/-	16/6
Crown Hotel, Liverpool Road, Birkdale	—	12/6
Queen's Hotel, Promenade, Southport	25/-	—
Scarisbrick Hotel, Lord Street, Southport	25/-	—
	21/- 7 days or over	
CONDITIONALLY LICENSED HOTELS		
Alexandra Hotel, Alexandra Road, Southport	25/-	—
Belle Vue Hotel, Lord Street West, Southport	From 35/-	—
Clifton Hotel, Promenade, Southport	22/6 to 30/-	—
Mornington Hotel, Hoghton Street, Southport	23/6 to 24/6	15/- to 16/-
UNLICENSED HOTELS		
Carlton Hotel, Lord Street, Southport	25/-	—
Gables Private Hotel, Hoghton Street, Southport	21/6 to 23/6	—
Sandringham Hotel, Promenade, Southport	21/- to 25/-	Saturday to Saturday bookings only
Waverley Hotel, Promenade, Southport	25/-	—
PRIVATE HOTELS AND BOARDING HOUSES		
Mrs. E. Bartle, Seafield, 2, Irving Street, Southport	14/6	—
Chantrey House, 7, Albert Road, Southport	18/6	12/6
Easemore Private Hotel, 3, Portland Street, Southport	16/6	11/6
Eyredene, 8, Knowsley Road, Southport	17/6	10/6
Franklyn Hotel, 65–65a, Promenade, Southport...	21/-	—
Mrs. N. D. Holt, Derby House, 6, Knowsley Road, Southport ...	17/6	10/6
Hopefield Private Hotel, 12, Albany Road, Southport	17/6	10/6 Saturday to Saturday bookings only
Messrs. Hulley & Shufflebottom, 31, Leicester Street, Southport ...	17/6	12/6
Ivanhoe Private Hotel, 87, Avondale Road, Southport	15/6	—
Knowsley Private Hotel, 2, Knowsley Road, Southport	17/6	10/6
Marlborough Private Hotel, 9, Church Street, Southport	14/-	10/-
Mr J. W. Matthews, Barrowfield, 37, Leicester Street, Southport ...	18/6	—
Orleans Private Hotel, 8, Lathom Road, Southport	22/6	13/-
Queen's Gate Private Hotel, 49, Queen's Road, Southport	21/-	12/6
Russell Hotel, 56, Promenade, Southport	18/6	12/6
Stafford House, 18, Bank Square, Southport (Mrs. M. W. Howarth)	15/6	10/6
Stella Maris Private Hotel, 25, Promenade, Southport	18/6	12/6
Summerfield Private Hotel, 31, Leicester Street, Southport	17/6	12/6 Saturday to Saturday bookings only
Talbot Private Hotel, Portland Street, Southport	18/6	11/6
Tatley Private Hotel, 83, Manchester Road, Southport	17/6	12/6
Mr. H. Tyson, 39, Bath Street, Southport	15/-	10/6
Willow Bank Private Hotel, 117, Leyland Road, Southport	15/-	10/6 Saturday to Saturday bookings only

*** Members are advised to make reservations by March 25th, otherwise accommodation cannot be guaranteed.**

THE EARL OF HUNTINGDON: We are fully aware of the urgency of this problem, and every possible step is being taken to expedite the matter. We hope to introduce legislation at the earliest possible moment, but I am afraid that owing to the pressure of work I cannot indicate a definite time for its introduction.

LORD HARLECH: Can the noble Earl give any indication as to whether it will be introduced this Session, before we part in July?

THE EARL OF HUNTINGDON: The noble Lord will be aware that we are now in the middle of a most difficult and congested programme, which is complicated by the crisis. It is not possible, therefore, for me to give a clear indication as to the time of introduction of the legislation in question.

EARL DE LA WARR: Would the noble Earl consider with the Minister whether it would be practicable for the Bill to be introduced into this House, so that it could receive at least a preliminary discussion.

THE EARL OF HUNTINGDON: I will certainly take notice of what the noble Earl says, and will refer the matter to my right honourable friend the Minister of Agriculture.

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BRITISH ARMY: DOGS (QUARANTINE)

In the House of Commons Mr. CHALLEN asked the Secretary of State for War for what reason the Services quarantine scheme has been terminated; and what arrangements will be made in future to assist Service personnel who desire to bring back dogs to this country.

Mr. SHINWELL: This scheme was intended primarily for the peak period of demobilisation, which is now passed. It has been necessary to terminate it on account of the need to save manpower. It is considered that the normal civilian quarantine facilities should be adequate to meet the future demands of Service personnel as well as civilians.

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DOCTORS' MOTOR CARS

Mr. N. MACPHERSON asked the Secretary of State for Scotland what representations have been made to him from the British Medical Association regarding the supply of cars to doctors in Scotland; and what steps he is taking to ensure that doctors in general practice are not prevented from carrying out their work through lack of transport.

Mr. J. J. ROBERTSON: My right hon. Friend has received a number of representations from doctors direct but none from the British Medical Association. Hon. Members are aware, however, that the distribution of new private cars in the home market is left to the motor industry, who have given an assurance that preference would be given to the delivery of cars ordered by doctors.

Mr. MACPHERSON: Is the hon. Gentleman aware that there is a very grave delay in the delivery of cars to doctors, extending over two years in some cases, and will he make certain, by approaching his right hon. Friend, that deliveries to doctors are given preference over exports?

Mr. ROBERTSON: As hon. Members will be aware, this was a case where a control was taken off and where a particular understanding was come to with the motor industry. I should like to know if the hon. Member is suggesting that this control should be applied again.

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COLONIAL EMPIRE: LIVESTOCK (HUMANE SLAUGHTER)

Mr. THOMAS REID asked the Secretary of State for the Colonies in what colonies are domestic animals which are killed for food, killed by modern humane methods.

Mr. CREECH JONES: In all important urban areas in the Colonies there are abattoirs where domestic animals are slaughtered under supervision and by humane methods, but it is as yet impossible to secure the adoption of these methods throughout the widely scattered rural areas.

Mr. REID: Would my right hon. Friend bring the matter to the attention of the Colonies concerned in the hope that some progressive legislatures will abolish this unnecessary cruelty to animals caused by cutting their throats?

Mr. CREECH JONES: I have considerable sympathy with my hon. Friend's view, and we have circularised all the Colonies on this matter.

An attempt to co-ordinate all dairying advisory work, research and teaching in the West of Scotland was made at a meeting of the governing body of the West of Scotland Agricultural College. Mr. John I. M. Hannah said great profit would accrue from a closer working arrangement.

NOTES AND NEWS

Diary of Events

Feb. 21st.—Meeting of the Society of Women Veterinary Surgeons at the Conway Hall, Red Lion Square, W.C.1, 2 p.m.

Feb. 24th.—R.(D.)V.C. Annual Ball, at the Assembly Hall, 54, George Street, Edinburgh.

Feb. 24th.—Meeting of the Southern Counties Division, N.V.M.A., at Southampton (Polygon Hotel), 2 p.m.

Feb. 25th.—Annual Meeting of the South-Eastern Division, N.V.M.A., at Tunbridge Wells (Mount Ephraim Hotel), 2.30 p.m.

Feb. 25th.—Annual Meeting of the Lancashire Division, N.V.M.A., at Liverpool (Geology Lecture Theatre, Brownlow Street), 2.30 p.m.

Feb. 26th.—Meeting of the Dumfries and Galloway Division, N.V.M.A., at Dumfries (Cairndale Hotel), 2.15 p.m.

Feb. 27th.—Annual) Meeting of the Royal Counties Division, N.V.M.A., at Reading (Caversham Bridge Hotel), 2.30 p.m.

Mar. 3rd.—Meeting of the N.V.M.A. Technical Development Committee, at 36, Gordon Square, W.C.1, 11 a.m.

Mar. 4th.—Meeting of the West of Scotland Division, N.V.M.A., Clinical Club, at the Glasgow Veterinary College, 7.30 p.m.

Mar. 5th.—Annual Meeting of the South Wales Division, N.V.M.A., at Carmarthen (Dolwar Café), 2.15 p.m.

Mar. 5th.—R.V.C. Medical Association: Annual Meeting at Camden Town, 3 p.m.

April 7th, 8th, 9th.—N.V.M.A. Committees and Council.

Sept. 8th to 15th (inclusive).—N.V.M.A. Congress at Southport.

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Vaccination Against Swine Fever

Members are informed that ample supplies of crystal violet swine fever vaccine are available, and may be obtained from the Ministry of Agriculture's Veterinary Laboratory at New Haw, Weybridge, Surrey.

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Scotland Adopts S.I. Comparative Test

The Department of Health for Scotland announces the adoption of the single intradermal comparative tuberculin test for use by the Department's Veterinary Inspectors in all official herd tests and tests of added animals under the Attested Herds Scheme.

The single test was introduced, by the Ministry of Agriculture, for England and Wales in June, 1947.

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Visit to Denmark (1948) by the Children of Veterinary Surgeons

As intimated in recent issues, the Danish Veterinary Association has once again invited children of British veterinary surgeons to go to Denmark for a holiday this summer. They have, in addition, most generously offered to pay the children's expenses from the date of their landing in Denmark to the date of their departure because, owing to the present currency restrictions at this end, no money can be taken out of England to Denmark; return tickets only could be bought for the children. As members will be aware, the ban on travel abroad, with money, is to be lifted for some countries, but it is not certain yet whether Denmark will be one of them. If it is, well and good; if it is not, the children will be able to go just the same through the generosity of our Danish veterinary colleagues. It is hoped that at some future date, Danish children will be invited back to this country as our guests in exchange.

The suggested number for the party is 20 and the Danish Veterinary Association, through an announcement in their journal, are enquiring what ages the hosts and hostesses would like their children-guests to be.

Meantime, owing to the urgent necessity of making at least some preliminary arrangements with Messrs. Cook, would members kindly notify the General secretary, N.V.M.A., 36, Gordon Square, London, W.C.1, **as soon as possible** if they are interested. The period of the holiday will probably be early August to early September.

PERSONAL

Appointment.—The appointment in the Colonial Veterinary Service is announced of Mr. Donald Fraser MacPherson, M.R.C.V.S., Senior Veterinary Officer, Kenya, as Chief Veterinary Officer, Nyasaland.

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Births.—BLAMIRE.—On January 24th, 1948, at Inverard Nursing Home, Edinburgh, to Catherine (Rena), wife of Capt. R. V. Blamire, R.A.V.C.—a daughter.

DANIEL.—On February 15th, 1948, to Brenda (*née* Rust) and Walter Daniel, MS.R.C.V.S., of Malt House, Gt. Massingham, Norfolk—a brother for Bruce (Hugh John).

JAMIESON.—On February 5th, 1948, to Elizabeth, wife of Samuel Jamieson—a son.

JARRETT.—On January 28th, 1948, to Elsie (*née* Montgomery), wife of T. Jarrett, M.R.C.V.S., Cupar, Fife—a daughter.

MURRAY.—On February 13th, 1948, at 8, Cassiobury Park Avenue, Watford, to Pamela (*née* Lavers), wife of Douglas Stewart Murray—a son (Paul).

ORR.—On February 10th, 1948, to Patricia Anne (*née* Battersbury), wife of F. H. Orr—a son.

PARKINSON.—On February 12th, 1948, to Beatrice, wife of J. D. Parkinson, B.V.SC., M.R.C.V.S., of Thorns Hall, Sedbergh—a son (John Scott).

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R.C.V.S. OBITUARY

STEWART, James Hamilton, M.C., M.R.C.V.S., Capt. late R.A.V.C., "St. Blanes," Neville Street, Cardiff. Graduated London December 22nd, 1914. Died February 15th, 1948; aged 58 years.

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Shetland's Freedom from Bovine Tuberculosis

CELEBRATION DINNER AT LERWICK

The county authorities and the stockowners of Shetland held a dinner in Lerwick on January 30th to celebrate the islands' distinction of being the first county area in Great Britain to be declared free of bovine tuberculosis.

Organised by the local branch of the N.F.U., the function attracted a large company, including several well-known visitors. Among the latter were Mr. J. N. Ritchie, Edinburgh, deputy chief of the Animal Health Division of the Ministry of Agriculture; Mr. E. F. Hardwick, M.R.C.V.S., Aberdeen, the district superintending veterinary inspector; Mr. Ian M. Campbell, Invershin, president, and Mr. William Graham, secretary, of the National Farmers' Union of Scotland; and Mr. William Adair, agricultural editor of *The Glasgow Herald*. All spoke at the ceremony. Mr. G. M. Nelson, area president of the N.F.U., presided.

A joint message from Mr. Woodburn, Scottish Secretary for Agriculture, and Mr. Williams, Minister of Agriculture, referred to the "splendid co-operative effort by the 2,000 owners of cattle in Shetland."

A further message, from Sir Basil Neven-Spence, M.P. for Orkney and Shetland, praising the "cleaning up" of the Shetland herds, said that tuberculosis was one of the scourges of society. Its continued existence was a blot on the social conscience.

Captain Ian Campbell, President of the N.F.U., said the achievement had a significance not only for Shetland, but for all Britain, and Mr. W. Adair pointed out that throughout Scotland only 30 per cent. of the cattle were attested, and in England, only 7 per cent.

Mr. W. Ritchie, the Department of Health's chief inspector for Scotland, said that the "isolation" of Shetland herds had been a helpful factor. He urged breeders not to risk importing non-tested cattle.

Among the toasts was that of the Shetland Cattle Herd Book Society, which was acknowledged by the Secretary, Mr. R. A. Johnson. While tuberculin-testing had preoccupied the attention of the Shetland farmers during recent years, Mr. Johnson said the fact that their stocks were now tubercle-free would enable the breeders to pay more heed to fixing true breed type and colour.

The breed's freedom from disease should serve as an effective advertisement for Shetland cattle, providing for the crofter and cotter an ideal cow, economical in feeding requirements and capable of yielding from 500 to 600 gallons of milk per year.

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ESTABLISHMENT OF STATUTORY COUNTY AGRICULTURAL EXECUTIVE COMMITTEES

The Minister of Agriculture and Fisheries proposes to appoint the statutory County Agricultural Executive Committees for which provision is made in the Agriculture Act, 1947, on February 16th, 1948. The new Committees are generally charged with the duty of promoting agricultural development and efficiency in their counties. They will take over the work of the present C.W.A.E.C.s together with certain additional duties which will be delegated to them by the Minister.

Each Committee will consist of not more than 12 members, of whom three will be appointed from persons nominated by the National Farmers' Union, two from persons nominated by the National Union of Agricultural Workers and the Transport and General Workers' Union, and two from persons nominated by the Central Landowners' Association. The chief officer of the Committee will, in future, be known as the County Agricultural Officer.

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DOGS AND POLIOMYELITIS

Mr. S. F. J. Hodgman, M.R.C.V.S., Director, Canine Research Station, Veterinary Educational Trust, Newmarket, writes as follows in the issue of the *British Medical Journal* of February 14th:

"My attention has been drawn to Mr. Victor Bonney's letter (December 27th, p. 1054) in which he describes a nervous disorder in two dogs with signs indicating lesions of an anterior (ventral) poliomyelitis.

"It is true that for the past year there has been an unusually large number of cases of motor-nerve defects in dogs occurrence of which suggests an infective origin. The aetiological agents responsible for these disorders are not, as yet, well established, but there is much clinical evidence to suggest that more than one virus with neurotropic properties is involved. The possibility that a virus causing poliomyelitis in man might be responsible for some of the syndromes in the dog has not been overlooked, but so far we have no evidence that these infective nervous disorders in the dog are associated in any way with viruses, known to cause disease in man."

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V.E.T. ANIMAL HEALTH FUND POSTER COMPETITION

The Veterinary Educational Trust announces a poster competition in aid of its Animal Health Fund. Certain of the rules and conditions of the competition, entries for which must feature animal health, are given below. Full particulars can be obtained from the Central Institute of Art, 41, Dover Street, London, W.1.

The Competition is open to any British subject, at home or overseas, and it is particularly hoped that veterinary students themselves, students at Schools of Art and practising artists will compete.

There are no age limits or entrance fees.

The subject of the Competition is an Appeals Poster, size 20 in. by 30 in. high, to be printed in three flat colours and black on white paper. The choice of colours to be used is left to the competitor. The following wording must be incorporated in the design:

ANIMAL HEALTH FUND OF THE VETERINARY EDUCATIONAL TRUST

The accent should be on "Animal Health Fund."

The work must be the original work of the competitor himself, but it is permitted for the designer of the poster to seek the co-operation of a lettering artist if he so desires.

Competitors may submit any number of entries.

Following is the panel of judges: Dr. W. R. Wooldridge, M.SC., M.R.C.V.S.; Sir Cleveland Fyfe, C.B.E.; Miss Eunice Kidd; R. W. Haddon, Esq., C.B.E.; John Skeaping, Esq.; A. Games, Esq., F.S.I.A., and Malcolm Fry, Esq., Director, Central Institute of Art and Design.

PRIZES

The following prizes will be awarded: 1st prize £100; 2nd prize £60; 3rd prize £40; one special award £20.

Entries for the competition, which closes on March 1st, 1948, must be posted or delivered to: The Central Institute of Art and Design, as above.

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UNIVERSITIES FEDERATION FOR ANIMAL WELFARE

CONGRESS AT STREATLEY

The Federation announces that a congress will be held at the Royal Veterinary College, Streatley, Berks., on Saturday, February 28th, 1948.

The programme will commence at 2 p.m., when a series of clinical and surgical demonstrations to be given by Professors

Burrow and Formston will include: Signs of health and illness in a cow; Methods of restraint and examination of animals; Examination of a dog for purchase; Destruction of a pig by captive bolt pistol; penicillin treatments in equines and bovines; and a short talk on diseases communicable to man from animals.

At 4 p.m., Professor J. G. Wright, M.V.SC., F.R.C.V.S., will speak on "The Care and Comfort of Animals During their Treatment for Injury and Disease." The chair at this meeting will be taken by Professor J. B. Buxton, M.A., F.R.C.V.S., D.V.H., and the address will be followed by a discussion.

Those attending will take tea as guests of Professor Buxton, Principal of the Royal Veterinary College and at 7 o'clock they are invited to a performance of the R.V.C. Pantomime: "Snow White and the Seven Dwarfs," produced by E. C. Appleby.

Transport will be arranged from Oxford, Reading and London. Those wishing to accept this invitation from:—Oxford should apply to Miss Ritchie, 20, Farndon Road; Reading to Miss Burnett-Stuart, Mansfield Hall; London to Miss Williams, 284, Regent's Park Road, Finchley, N.3, for full particulars of travelling facilities.

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The many members of the profession acquainted with him will learn with much regret that Mr. F. T. Levick is retiring through ill-health from the secretaryship of the Farmers' Club. Mr. Levick has held the office for the last ten years of his 36 years' association with the Club, and he is to continue as its consultant adviser. He has seen its membership rise from 980 to almost 5,000 and its accommodation increase sixfold. In addition, he has been secretary of the Live Stock Export Group, the Rating Surveyors' Association and the Central Association of Agricultural Valuers.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SWINE FEVER:

Lincoln (*Kesteven*).—The Studio, Lincoln Road, Washingborough, Lincs. (Feb. 10th).

SHEEP SCAB:

Cumberland.—Bolton Park Farm, Mealsgate, Carlisle, Cumberland (Feb. 9th).

Derbyshire.—Twetchill Farm, Edale, Sheffield (Feb. 5th).

Westmorland.—Town Foot, Tebay, Penrith, Cumberland (Feb. 12th).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

Correspondents should write as briefly as possible and letters should not exceed 350 words.

IN DEFENCE OF THE ASSISTANTS—OR "AGITATORS"

Sir,—If one—

(*a*) Supports the N.V.M.A. in its efforts to obtain, for Ministry veterinary surgeons, improvements in status, salaries and conditions;

(*b*) Adds further support to (*a*) by refusing to apply for the positions offered by the Ministry of Agriculture—

Then one is thought a worthy member of the N.V.M.A.

However, if one—

(*a*) Forms a union of assistants to demand a minimum salary of £500, with annual increases and reasonable organised (and it can be organised) leisure;

(*b*) Endeavours to persuade the newly qualified members to support (*a*)—

Then one is regarded as an "agitator," strike promoter, or even a "red."

One recalls that from 1939 to 1941 there was unemployment in our profession. Salaries were small, in some cases so small that you, Sir, would not like to print the figure I could give. Yet at that time was there any real, whole-hearted effort by the N.V.M.A. to seek improvement? No, Sir. How right one of our colleagues was recently. He said that the persons attending N.V.M.A. meetings and making decisions are, chiefly, principals of practices—not their assistants.

Thus one can sympathise with the assistants demanding the maximum, in the hope that the minimum they will receive will enable them to live *normally*—and attain a status above that of a farm labourer.

Salaries and conditions have improved, owing to the shortage of assistants. This position can change rapidly if assistants become too numerous.

It is, however, pleasant to know that there are many employers in this small profession whose generosity and "fair-mindedness" are greatly admired. One hopes their example will influence the remainder.

I am, Sir,
Yours truly,

Wickham, J. E. JOHNSON.
Newcastle-upon-Tyne.
October 5th, 1947.

[This letter was received as dated and the Editorial Committee much regrets that it was felt necessary to delay publication.—*Editor*.]

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TWO RECENT CASE REPORTS

Sir,—I really must express the utter amazement which my colleagues and I felt at some of the contents of two clinical articles by N. H. Bastawy which were produced in the *Record* on November 1st, 1947, and January 3rd, 1948.

In the first communication the author's report on Case 5 of a faecolith in a cat makes me wonder why

(*a*) He failed to locate the obstruction by abdominal palpation which is rarely difficult in the feline.

(*b*) If he encountered difficulty in palpation, he did not employ narcosis or anaesthesia to facilitate his examination.

It is small wonder that the wretched animal "became progressively worse in spite of treatment and soon died" as it is obvious that the author had not the slightest idea what he was treating.

His amazement at the hair having been ingested due to licking during the "normal process of moulting" is equalled only by my wonder that any veterinarian who has been in practice for more than six months, has not learnt that "fur ball" in long-haired cats can be considered practically a normal occurrence.

In Bastawy's second communication regarding treatment of otitis in dogs, there was no mention of the causes of the "canker," of which we recognise at least four different types.

The average length of time to cure his ten cases was 22 2/5th days. I wish my clients were as patient as the Egyptians!

Yours faithfully,

43, St. David's Hill, PETER J. DALTON, M.R.C.V.S.
Exeter.
January 26th, 1948.

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THE "FORTHRIGHT" CRITIC

Sir,—In your issue of January 17th, just to hand here, following a wise and eminently practical exposition of the "Present Position of the Livestock Industry and the Contribution the Veterinary Profession can make to it" by the President, N.V.M.A. (Mr. L. Guy Anderson), Professor G. F. Boddie, declaring his intention, in opening the discussion, to be "forthright as is his custom," had some hard words to say about certain recent issues of *The Veterinary Record*. He questioned the scientific worth of some articles that had been published of late and asserted that this was responsible for the unwillingness of many younger members of the profession to send contributions to the *Record* . . ."

This is a serious charge.

Instead of being so "forthright" in his condemnation, may I, however, suggest to him that before levelling such a charge it would be far more conducive towards the advancement of the cause we have in common—and, incidentally, towards producing ultimately within him a happier frame of mind—if he himself, as a true judge of "scientific worth," were to set out deliberately to help those "younger members" to overcome their "unwillingness"—and, perhaps also, if they were but to admit the truth, some lack of confidence in their own ability to express themselves in print? I am sure the Editorial Committee could be trusted to give priority to what would then be forthcoming of superior "scientific worth."

My own opinion, for what it is worth, is that *The Veterinary Record* remains what that great veterinary scholar Professor E. Leclainche declared it to be several years ago, the *professional* journal that is most truly "alive" of any circulating in the world to-day. And so, far away, I continue to look forward to its arrival as perhaps the most interesting feature in the week.

Yours faithfully,

Cairo. J. T. EDWARDS.
February 5th, 1948.